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10/565,384

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Longhe Yang

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DLA PIPER US LLP

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EXAMINER

SHAH, TUSHAR S

ART UNIT

PAPER NUMBER

2184

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,384

Applicant(s)

YANG ET AL.

Examiner

TUSHAR S. SHAH

Art Unit

2184

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 23 January 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

This action is in response to the application filed on 1/23/2006.

Status of claims

Claims 1-20 have been presented for examination. Claims 1 and 11 are in independent form.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-4, 10, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. These claims are omnibus type claims.

As per claim 2, lines 2-3, the applicant has used the phrase "one selected from, but not limited to the group consisting of..." As a result there is no clear bound on the claim. The phrase "consisting of" refers to a closed grouping. This requires that the interface, in this case, be only of the list following the phrase "consisting of."

Regardless of the grouping, whether open or closed, the inclusion of the phrase, "but not limited to," creates a lack of any specific boundary in the claim. In the art rejection following, the examiner has interpreted the claim to be of a closed grouping.

Claims 3, 4, 10 and 18, all contain similar issues as claim 2.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the

Art Unit: 2184

invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-7, 11-15 and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang US Publication No. 2005/0083741 A1 (hereinafter Chang).

Referring to claim 11, Chang discloses:

A method of AutoRun using a semiconductor storage device, the semiconductor storage device (Integrated Circuit Memory Device 100, Chang Fig. 1) being coupled with a host computer (host 150, Chang Fig. 1) having an operation system with an AutoRun mechanism, comprising:

1) the operation system of the host computer sending out a first inquiry command (Step 310, the host computing device performs an enumeration to identify the newly attached USB peripheral, Chang page 2, paragraph 0025, lines 1-2) to the semiconductor storage device (USB peripheral) for detecting the type of the device;

2) the semiconductor storage device replying to the first inquiry command from the operation system that the device is an

optical disk (Step 33, the autorun firmware in the USB peripheral announces itself with a device interface description such as a Bulk Only Transport corresponding to a CD-ROM, Chang page 2, paragraph 0027, lines 1-5);

3) the operation system of the host computer deeming the semiconductor storage device as an optical disk based on the reply from the semiconductor storage device (the USB peripheral firmware announces itself as a CD-ROM using the bulk only transport protocol, Chang page 2, paragraph 0027, lines 1-5), and performing an operation accordingly (the host request enumeration of the files in the root directory and the firmware responds, Chang page 2, paragraph 0028, lines 5-7); and

4) the AutoRun mechanism of the operation system searching for an AutoRun configuration file (Autorun.inf, Chang page 2, paragraph 0029, line 4) stored in the semiconductor storage device (the file is stored on the memory component of the USB peripheral, Chang page 2, paragraph 0029, lines 3-5) which simulates an optical disk drive so that a specific file directed by the AutoRun configuration file can be executed.

As per claim 12, Chang discloses, the method of claim 11, wherein the step 4) comprises:

4-1) the operation system sending out a second inquiry command to detect whether an optical disk is inserted into the optical disk drive when the semiconductor storage device is deemed to be an optical disk drive (Inherent, it is the standard operation every operating system to inquire as to whether or not there is a disk in a drive. It is there fore inherent that if the USB peripheral of Chang presents itself as a CD-ROM drive, the OS of the host system would necessarily inquire as to whether or not the device had a disk in it, Chang page 2, paragraphs 0025 and 0027);

4-2) in response to the second inquiry command, the semiconductor storage device, which simulates an optical disk drive, replying to the operation system after a predetermined delay, that an optical disk is already inserted into the optical disk drive so that the operation system can deem the semiconductor storage device as an optical disk with in an optical disk (Inherent, in mimicking the operation of CD Rom drive, the USB peripheral would necessarily have to indicate that it was a CD drive with a disk. Chang indicates that the host requests enumeration of files in the disk. It could only make this request in the event that it believed there was a disk and there for a file structure to be read from. Therefore this

limitation is seen as inherent by the examiner, Chang page 2, paragraph 0028, lines 5-8); and

4-3) the AutoRun mechanism of the operation system searching for the AutoRun configuration file (in response to the enumeration of the files in the USB peripheral, Chang page 2 paragraph 0028 lines 5-8, the autorun firmware informs the host of the presence of Autorun.inf, Chang, page 2, paragraph 0029, lines 1-5) stored in the semiconductor storage device which simulates the optical disk drive with an optical disk so that the operation system can execute the specific file directed by the AutoRun configuration file.

As per claim 13, Chang discloses, the method of claim 12 wherein an AutoRun program is preset in the semiconductor storage device coupled to the host computer and capable of directing a specific file; and the AutoRun program is directed by the AutoRun configuration file, wherein the step 4-3) comprises:

4-3-1) the operation system accessing the AutoRun configuration file stored in the semiconductor storage device (Autorun.inf, Change page 2, paragraph 0029, line 4), and searching for an AutoRun program (the host request enumeration

of the files in the root directory and the autorun firmware responds, Chang page 2, paragraph 0028, lines 5-7);

4-3-2) executing the AutoRun program to search for the specific file (the autorun firmware informs the host of an autorun executable file in response to the hosts request for files in the root directory, Chang page 2, paragraphs 0025), and copying the AutoRun program and the specific file to a host disk of the host computer (the autorun firmware provides the autorun executable to the host, Chang page 2, paragraph 00229, lines 2-3);

4-3-3) the copy of the AutoRun program in the host disk of the host computer calling and executing the copy of the specific file (the host executes the autorun executable file to provide the autorun functionality, Chang page 2, paragraph 0029, lines 5-7);

4-3-4) the copy of the AutoRun program sending out a rest command to the semiconductor storage device (Step 360, a query to see if the USB peripheral is to be enumerated again, which if the autorun is complete, would allow it to announce itself as USB device (e.g. a data storage device), Chang page 2, paragraph 0030, lines 1-8).

As per claim 14, Chang discloses, the method of claim 12, wherein an AutoRun program is preset in the semiconductor storage device coupled to the host computer and capable of directing a specific file; and the AutoRun program is directed by the AutoRun configuration file, wherein the step 4-3 comprises:

4-3-1) the operation system accessing the AutoRun configuration file (Autorun.inf, Change page 2, paragraph 0029, line 4) stored in the semiconductor storage device to search for the AutoRun program (the host request enumeration of the files in the root directory and the autorun firmware responds, Chang page 2, paragraph 0028, lines 5-7), and timing (Inherent, the autorun executables provide timing for re-enumerating themselves when they have run their course, Step 360, Chang Fig. 3);

4-3-2) executing the AutoRun program to search for the specific file (the autorun firmware informs the host of an autorun executable file in response to the hosts request for files in the root directory, Chang page 2, paragraphs 0025), and copying the AutoRun program and the specific file to a host disk of the host computer (the autorun firmware provides the autorun executable to the host, Chang page 2, paragraph 00229, lines 2-3);

4-3-3) the copy of the AutoRun program in the host disk of the host computer calling and executing the copy of the specific file (the host executes the autorun executable file to provide the autorun functionality, Chang page 2, paragraph 0029, lines 5-7);

4-3-4) sending out a reset command to the semiconductor storage device when the timing ends (If the Autorun program has run its course, step 360, the device re-enumerates itself to announce itself as a USB peripheral, Step 370, and if not it continues to act as a virtual CD ROM device, Step 390, Chang Fig 3.)

As per claim 15, Chang discloses, the method of claim 14, wherein the timing is set by a user or through a special software and/or program (the timing to re-enumerate is set by autorun firmware, Chang page 2, paragraph 0030, lines 1-8 and Fig. 3).

As per claim 18, the method of claim 11, wherein the AutoRun mechanism of the operation system of the host computer supports an automatic execution of a file in the optical disk in the optical disk drive, and the optical disk drive includes but not limited to a CD-ROM, a CD-RW, a DVD-ROM, a DVD-RAM, a blue

laser DVD, and/or a red laser DVD (USB peripheral enumerates itself as CD-ROM, Chang page 2, paragraph 0027, lines 5-6).

As per claim 19, Chang discloses, the method of claim 11, wherein a device type of the semiconductor storage device can be changed by inputting an indication from a command, buttoning, or programming (person operable physical slide switch 700, Chang page 3, paragraph 0043, lines 1-5);

The semiconductor storage device is then preset as a preset type selected from the predetermined types according to the input indication (switch 700 allows a person to select from among multiple modes, functionalities or peripherals available on the USB device, Chang page 3, paragraph 0043, lines 2-8), and after the semiconductor storage device is reset, the semiconductor storage device is coupled to the host computer as the preset type of device (based on the position of switch 700, the various functionalities of the device maybe enabled and disabled, Chang page 3, paragraph 0044, lines 1-8).

As per claim 20, Chang discloses, the method of Claim 11 wherein the host computer can perform a conventional storage operation on the semiconductor storage device according to a user command (Step 370 and 380, the USB peripheral re enumerates

itself as a storage device, and loads the firmware to associated with the enumerated type, making it available for commands, Chang page 2, paragraph 0031, lines 1-7).

Referring to claim 1, similar limitations as in claim 11 are recited. Therefore the rejection of claim 11 applies to claim 1.

As per claim 2, Chang discloses, the method of Claim 1, wherein the semiconductor storage device is coupled to the host computer through one selected from, but not limited to the group consisting of a USB interface, a UWB interface, a blue-tooth interface, an IrDA infrared interface, a HomeRF interface, an IEEE 802.11a interface, an IEEE 802.11b interface, an IEEE 1394 Bus, an IDE bus, a USB bus, an LAN, and/or a WAN (USB peripheral, Chang page 2, paragraph 0025, lines 1-2).

As per claim 3, the method of claim 1, wherein the predetermined device types which are supported by the AutoRun mechanism of the operation system of the host computer, include, but not limited to, an optical disk, a host disk, a removable disk, a USB large volume disk, and/or a USB flash disk (The

current invention provides AutoRun by mimicking a CD-ROM drive, Chang page 2, paragraph 0027, lines 5-6).

As per claim 4, the method of claim 3, wherein the optical disk includes but not limited to, a CD-Rom, a CD-RW, a DVD-ROM, a DVD-RW, a DVD-RAM, a blue laser DVD, and/or a red laser DVD (The current invention provides AutoRun by mimicking a CD-ROM drive, Chang page 2, paragraph 0027, lines 5-6).

As per claim 5, similar limitations as in claim 19 are recited. Therefore the rejection of claim 19 applies to claim 5.

As per claim 6, the method of Claim 1, wherein the predetermined device types can be defined as one or more device types based on related protocols (the USB peripheral maybe made up of several USB device, Chang page 3, paragraph 0040, lines 1-10, and Fig. 6);

The semiconductor storage device can be coupled to the host computer as one device, or as more devices which are processed according to the device types, respectively (the USB peripheral maybe made up of several USB device, Chang page 3, paragraph 0040, lines 1-10, and Fig. 6).

As per claim 7, the method of Claim 1, wherein the semiconductor storage device detects whether the AutoRun configuration file is present in a storage space of the semiconductor storage device (Step 320, Chang page 2, paragraph 0026, lines 1-3 And Fig. 3);

If the AutoRun configuration file is present, the semiconductor storage device is coupled to the host computer as a preset type (step 330, Change page 2, paragraph 0027, lines 1-6 and Fig. 3);

If the AutoRun configuration file is not present, the semiconductor storage device is coupled to the host computer as a conventional storage device (Step 320 proceeds to Step 370 if the autorun firmware is disabled or not present, Chang page 2, paragraph 0026, lines 1-3 and Fig. 3).

As per claim 8, similar limitations as in claim 20 are recited. Therefore the rejection of claim 20 applies to claim 8.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 9, 10, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang.

As per claim 16, Chang discloses, the method of Claim 11, further comprising the following steps for switching the semiconductor storage device to the conventional storage device after activating the AutoRun mechanism of the operation system in step 4), including:

5) resetting the semiconductor storage device (the USB peripheral re-enumerates itself to the system, Chang page 2, paragraph 0030. lines 1-8).

6) replying that the semiconductor storage device is the conventional storage device when the operation system sends out the first inquiry command for detecting the type of the device (the autorun firmware announces itself as a USB peripheral, e.g. data storage device, Step 370, Chang page 2, paragraph 0030, lines 4-6);

7) the operation system performing a configuration based on the reply from the semiconductor storage device (Step 380, the autorun firmware loads the firmware associated with the enumerated USB peripheral); and

It is noted that Chang does not specifically disclose, 8) the operation system performing a conventional storage operation on the semiconductor device according to a user command.

However, one of ordinary skill in the art would appreciate that in step 380 the USB peripheral has identified itself as a storage device and is therefore available for storage operations as per the device descriptors it provides to the host (Chang page 2, paragraph 0031, lines 5-6). Therefore it would be obvious to perform a storage operation on the USB peripheral

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Chang before him or her, to modify the method of Chang to perform a storage operation on the USB peripheral.

The suggestion/motivation for doing so would have been that using the USB storage device as a storage device would utilize the device in its intended fashion.

As per claim 17, Chang does not specifically disclose, the method of claim 16, wherein said steps for switching the semiconductor storage device to a conventional storage device can be performed after activating the AutoRun mechanism of the operation system, regardless of the execution of specific file.

However, one of ordinary skill in the art would recognize that the autorun firmware could re-enumerate the device prior to the completion of the autorun executable. The autorun executable is provided to the host and once that has occurred it could clearly run its course independent of the USB peripheral maintaining its status as a virtual CD ROM drive.

The motivation to do so is apparent in that once the autorun executable has been provided to the host, its operation is independent of the device enumeration of the USB peripheral and therefore one of ordinary skill in the art at the time of the invention would clearly see that it is not necessary to tie the re-enumeration process to the completion of the autorun procedure.

As per claim 9, similar limitations as in claim 17 are recited. Therefore the rejection of claim 17 applies to claim 9.

As per claim 10, Chang discloses, the method of claim 9, wherein the conventional storage operation is a process based on a protocol according to a conventional device type of the semiconductor storage device, and the protocol includes but not limited to UFI, SFF80201, SCSI Transparent Command Set, Reduced Block Commands (RBC), T10 Project 1240-D, ZIP Disk and/or MO Disk protocols (SCSI transparent command set, Chang page 2, paragraph 0027, line 4).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Juan Japanese Application No. 2004342068 A discloses a USB cable device for file transfer where the USB cable simulates a CD ROM drive to provide transfer via an auto run feature.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUSHAR S. SHAH whose telephone number is (571)270-1970. The examiner can normally be reached on Mon-Fri 7:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Henry Tsai can be reached on 571-272-4176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/T. S. S./

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Supervisory Patent Examiner, Art Unit 2184